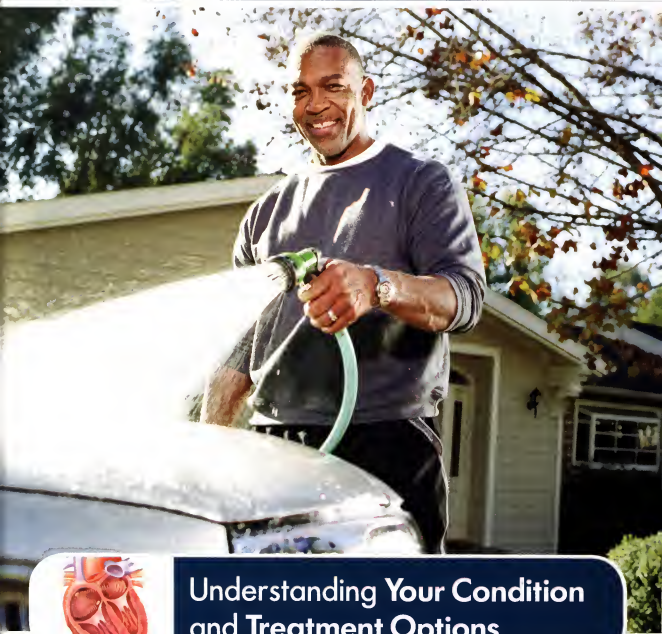


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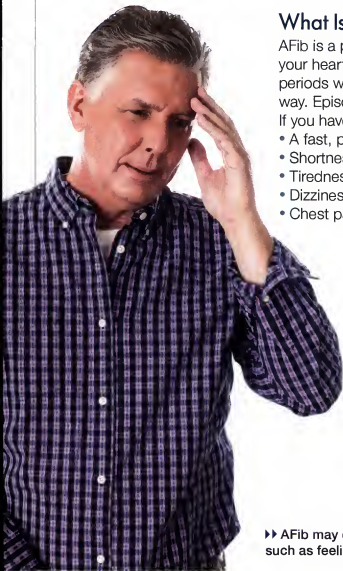
# ATRIAL FIBRILLATION



**Understanding Your Condition  
and Treatment Options**

# When You Have Atrial Fibrillation

You've been told that you have a heart condition called **atrial fibrillation** (also called AFib). Hearing you have a heart problem can be scary. But here's the good news: AFib is a common condition that is rarely life-threatening. And, it can be managed. Read on to learn how you can control your AFib and live a normal, active life.



## What Is AFib?

AFib is a problem with the speed and pattern of your heartbeat. It can occur in **episodes**. These are periods when your heart beats in a fast and irregular way. Episodes can occur with or without symptoms. If you have symptoms, they may include:

- A fast, pounding, irregular heartbeat
- Shortness of breath
- Tiredness
- Dizziness or fainting
- Chest pain

## What Puts You At Risk?

You are more likely to have AFib as you get older. Other things that can increase your risk for AFib include:

- Having other heart conditions, such as coronary artery disease, heart valve disease, or heart failure
- Having high blood pressure
- Having certain health problems, such as diabetes, lung disease, thyroid problems, or sleep apnea
- Having had heart surgery
- Drinking alcohol heavily

►► AFib may cause symptoms, such as feeling faint or dizzy.

AFib without underlying heart disease  
is called **lone AFib**.



## Planning Your Treatment

AFib can make other heart problems more likely. It can also increase the risk for **stroke** (a blood clot in the brain). So, even if it doesn't cause symptoms, AFib should be treated. You and your healthcare provider can work together to create the best treatment plan for you. Your healthcare provider will help you understand all of your options as well as their benefits and risks. Be sure to ask questions and get the answers you need.

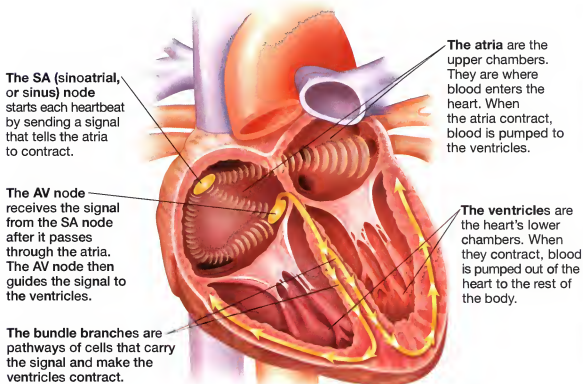


# Understanding Your Heartbeat

The heart pumps to move blood through the heart and out to the body. To do this, chambers in the heart squeeze (contract) and relax. These actions create a **heartbeat**. The number of beats per minute (bpm) is called the **heart rate**. The pattern of the heartbeats is called the **heart rhythm**. An **arrhythmia** is a problem with the heart's rate, rhythm, or both. AFib is one type of arrhythmia.

## Electrical Signals Tell the Heart to Beat

Each heartbeat starts with an electrical signal. These signals are sent and received by special cells in the heart called **nodes**. As signals move through the heart, they tell the heart's chambers (the **atria** and **ventricles**) when to contract. When you're active, the signals speed up. This makes the heart beat faster so it can send more blood to the body. When you rest, the signals slow down again.



A normal resting heart rate  
is about 50 to 100 bpm.

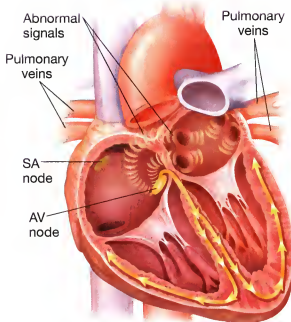
**DID YOU  
KNOW?**

## During Atrial Fibrillation

During an AFib episode, the heart receives abnormal electrical signals. The signals cause the atria and the ventricles to contract in a fast and irregular way.

- **Fast heart rate:** The atria may reach up to 300 to 600 bpm. The ventricles may reach about 150 bpm or higher.
- **Abnormal heart rhythm:** The difference in the rates between the chambers means they are out of sync. This causes heartbeats to have an irregular pattern.

When the chambers beat too fast and out of sync, they have a hard time moving blood through the heart. So, less blood than normal is pumped to the body. This can cause symptoms.



## Types of A-Fib

- **Paroxysmal AFib** involves episodes that last less than 7 days. They start and stop on their own.
- **Persistent AFib** involves episodes that last longer than 7 days. They typically require treatment to be stopped.
- **Permanent AFib** is when A-fib is ongoing and resists most treatment attempts.

## Atrial Flutter

Some people with AFib also have **atrial flutter**, another type of arrhythmia. With atrial flutter, abnormal signals in the atria cause them to contract too quickly. This results in a fast, steady heartbeat. Atrial flutter can cause symptoms similar to AFib. It also increases the risk for stroke. Treatment for both conditions is similar as well. If you have atrial flutter, your healthcare provider can tell you more about your options.

# Testing for AFib

**You've likely had an evaluation. During this, your healthcare provider took a detailed health history and performed a physical exam. Now certain tests will likely be done. These help your provider learn more about your heart rate and heart rhythm. You and your provider can then use this information to plan your treatment.**

## Electrocardiogram (ECG)

This test records the electrical activity of the heart. Small pads (electrodes) are placed on your chest, shoulders, and arms. A strip is then created showing the pattern of the heartbeat. Only a few minutes are recorded, so paroxysmal AFib will be detected only if an episode happens during the test.



**An ECG of a normal heartbeat. A new beat starts near each tall peak. Note that the heartbeats are evenly spaced. This shows that the heart rhythm is regular.**



**An ECG of a heartbeat during AFib. The tall peaks are closer together than in the normal heartbeat. This shows that the heartbeat is faster than normal. The uneven spaces between the taller lines show that the heart rhythm is irregular.**

You may see a **cardiologist** or **electrophysiologist**. These are doctors who treat heart or heart rhythm disorders.



## Heart Monitors

To help diagnose paroxysmal AFib, a portable heart monitor can be worn on the body. The monitor records heart activity for a longer time than a regular ECG. After the tests are done, data from the monitor is analyzed by your healthcare provider.

- **An event monitor** can be worn for several weeks. One kind is a memory loop recorder. This monitor records constantly, but stores the recording only when you press a button. Another kind turns on only during an episode.
- **Holter monitors** can be worn for days. They provide a constant recording of heart activity.

## Other Tests You May Have

- **An echocardiogram (echo)** uses sound waves to create a moving picture of the heart. It shows the size and shape of the heart. It also shows how well heart chambers and valves are working.
- **A transesophageal echocardiogram (TEE)** is a special type of echo. This test works from inside the chest using a tube put down the throat. A TEE shows more detail than a regular echo.
- **Blood tests** check for problems, such as overactive thyroid, that can increase the risk for AFib.
- **Other heart tests** check how well the heart works. These can include stress tests done using an ECG, echo, or nuclear imaging.



## Your Treatment Plan

Based on the results of your evaluation and tests, you may have several treatment options. You and your healthcare provider will work together to review these and decide on your care plan. In general, the goals of AFib management are:

- To slow down a fast heart (rate control)
- To restore a normal heart rhythm (rhythm control)
- To prevent blood clots and stroke

# AFib Medications

**Medications can help reduce the number and length of AFib episodes. They do this by controlling the rate or the rhythm of the heartbeat. Talk to your healthcare provider about medication options.**

## Controlling the Heart's Rate

Most people with AFib need rate control. Rate control slows down the ventricles. This allows them to fill with more blood before they contract. As a result, the ventricles pump more blood to the rest of the body. This can help relieve symptoms. Most people with AFib can live comfortably when their heart rate is under control. This is true even if their rhythm is still abnormal. Rate control medications include:

- Beta-blockers, such as metoprolol, atenolol, carvedilol, and bisoprolol
- Calcium channel blockers, such as diltiazem and verapamil
- Digoxin

## How Rate Control Medication Is Given

Rate control medication is usually taken daily. Your healthcare provider will prescribe it if he or she thinks it can help you. You may take one medication or a combination of medications.



## Controlling the Heart's Rhythm

Rhythm control medications can help maintain a regular heart rhythm. Like rate control, rhythm control helps the heart pump in a more efficient way. This can help reduce AFib symptoms. Rhythm control medications include:

- Amiodarone
- Flecainide
- Propafenone
- Sotalol
- Dofetilide

### How Rhythm Control Medication Is Given

Rhythm control medication is often given for the first time at a doctor's office, hospital, or clinic. The medication may be given by injection or taken as a pill. Your body's response to the medication is monitored. This is to make sure it works for you. The medication may then be taken in one of two ways:

- **Daily.** If you have frequent AFib episodes, you may take rhythm control medication every day to help prevent episodes.
- **As needed.** If you have infrequent AFib episodes and no other heart disease, you may use "pill-in-the-pocket" treatment. This means you carry medication with you and take it when an AFib episode occurs.



**Note:** Some rhythm control medications increase the risk for other heart rhythm problems. If you're prescribed heart rhythm medication, take it only as instructed by your healthcare provider.

### Possible Side Effects of AFib Medications

The side effects of medications used for rate control and rhythm control vary depending on what type of medication you take. Side effects can include, but are not limited to:

- Constipation
- Dizziness
- Fatigue
- Swelling of the legs
- Nausea and vomiting
- Erectile dysfunction



# Medications to Prevent Stroke

**A critical part of your AFib treatment plan is preventing stroke. This is because AFib can cause blood to pool and clot. The risk of stroke is higher if you have certain health problems along with AFib. To reduce stroke risk, your healthcare provider is likely to prescribe an anti-clotting medication for this purpose.**

## Types of Anti-Clotting Medications

- **A blood thinner (anticoagulant)** may be prescribed if you have a high risk for stroke. This medication is taken daily. It may be needed for the rest of your life. Common blood thinners include warfarin, dabigatran, rivaroxaban, and apixaban. These medications are very effective at preventing blood clots. But they can lead to uncontrolled bleeding if the dosage is not correct. Depending on which medication you take, you may need regular blood tests to check how well it is working. Your healthcare provider can tell you more.
- **Low-dose aspirin** may be prescribed if you have a low risk for stroke. If taken daily, it can help prevent blood clots.



▶▶ Anti-clotting medications must be taken exactly as directed to work properly.

## Know the Signs of a Stroke

When you have AFib, it's important to know the warning signs of a stroke. Getting help quickly can reduce stroke damage. **Call 911 or emergency services right away if you suddenly have the following:**

- Weakness, numbness, tingling, or loss of feeling in your face, arm, or leg
- Trouble seeing; double vision
- Trouble speaking or understanding others
- Loss of balance, a feeling of spinning, or blackouts
- Severe headache



# Electrical Cardioversion

If medications don't do enough to reduce AFib symptoms, your healthcare provider may suggest a procedure called **electrical cardioversion (EC)**. During EC, electric current is used to “shock” the heart back into normal rhythm. It is most often used to treat persistent AFib.

## Preventing Clots

Before the procedure, you may have preventive treatment to make sure there are no blood clots in your heart chambers. This may include taking a prescribed amount of blood thinner. Or you may have a TEE (see page 7).

## How the Procedure Works

During EC, special pads are placed on your chest or paddles are used to send one or more brief electric shocks to your heart. If EC doesn't work the first time, it may need to be repeated during the same session. You'll likely go home a few hours after the procedure.

## Risks and Complications

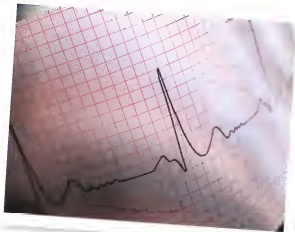
**!** *of EC include:*

- Heart rhythm problems
- Mild skin burn (rare)
- Stroke (rare)

## When to Call the Doctor

**☎** *After this procedure, call your healthcare provider if you have:*

- Return of AFib soon after the procedure
- Shortness of breath
- Dizziness
- Signs of a stroke (see page 10)



# Catheter Ablation

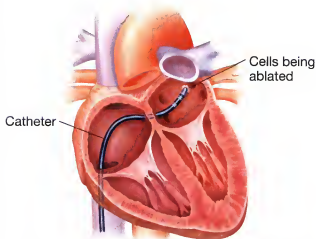
Catheter ablation is a procedure used to help lessen AFib symptoms. A catheter (thin, flexible tube) is guided through a blood vessel into the heart. The catheter then delivers energy to destroy cells in the heart that are sending abnormal signals. AFib and anti-clotting medications may still need to be taken after the procedure is done.

## Left Atrial Ablation

Left atrial ablation can help treat paroxysmal and persistent AFib. It is used when medications and EC don't work. Ablation can greatly reduce or stop AFib symptoms.

### How the Procedure Works

A catheter is put into the left atrium and moved to the heart cells thought to send abnormal signals. The catheter uses heat or cold to destroy the cells.



With left atrial ablation, a catheter destroys cells in the left atrium.

## Risks and Complications

**!** of catheter ablation include:

- Bleeding around the heart
- Damage to the heart muscle, requiring surgery to repair
- Damage to the pulmonary veins
- Damage to esophagus
- Stroke

## When to Call the Doctor

**📞** After this procedure, call your healthcare provider if you have:

- Fever of 100.4°F (38°C) or higher
- Persistent cough
- Trouble swallowing
- Shortness of breath
- Coughing up blood
- Signs of a stroke (see page 10)

A common type of left atrial ablation is called **pulmonary vein isolation (PVI)**.

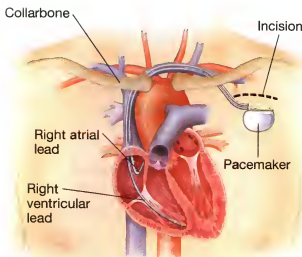


## AV Node Ablation

AV node ablation is used for AFib that can't be treated with medications or other techniques. AV node ablation does not eliminate AFib. But it does greatly reduce symptoms. It is also called "ablate and pace."

### How the Procedure Works

A catheter is put into the right atrium. An electric current is sent through the catheter to destroy the whole AV node. This keeps the ventricles from receiving abnormal signals. But without the AV node, the ventricles now contract too slowly. So, a device called a **pacemaker** is permanently placed into the chest. This device sends signals that make the ventricles contract at a normal rate.



With AV node ablation, the AV node is destroyed. A pacemaker is then placed in the chest. The pacemaker sends signals that replace the signals the AV node no longer sends.

## Risks and Complications

**!** of AV node ablation include:

- Bleeding
- Infection at the incision site
- Damage to the lung or heart muscle
- Dislodging of pacemaker lead

## When to Call the Doctor

**📞** After this procedure, call your healthcare provider if you have:

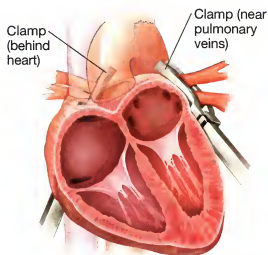
- Bleeding
- Increasing redness, swelling, warmth, bleeding, or drainage at incision site
- Fever of 100.4°F (38°C) or higher
- Pain around your pacemaker
- Chest pain or shortness of breath
- Frequent or constant hiccups
- Dizziness or fainting

# The Maze Procedure

The maze procedure treats all types of AFib. It reduces or stops AFib episodes. The procedure is often done during open heart surgery for another condition. If open heart surgery is not planned, a procedure similar to the maze might be done. This variation is done through small incisions. Your healthcare provider can tell you more.

## How the Procedure Works

The goal of the maze procedure is to create scar tissue. This can block the abnormal signals causing AFib. The scar tissue may be created in different ways. One way uses clamps to deliver radiofrequency energy to heat the heart tissue. During the procedure, a small chamber (called the left atrial appendage) may be removed from the left atrium. Blood clots that cause strokes are often found here.



With the maze procedure, clamps may be used to create scar tissue on the heart, blocking abnormal signals.

## Risks and Complications

**!** *of the maze procedure include:*

- Risks from open heart surgery
- Damage to the SA node
- Damage to the esophagus
- Stroke
- Slowing the heart rate too much, requiring a pacemaker

## When to Call the Doctor

**📞** *After this procedure, call your healthcare provider if you have:*

- Fever of 100.4°F (38°C) or higher
- Shortness of breath
- Dizziness or fainting
- Coughing up blood

# Living with AFib

**Treatment for AFib can help improve your health, so be sure to follow your treatment plan. Also, see your healthcare provider for follow-up visits as directed.**

## Follow-Up Visits

You may have to see your healthcare provider for regular visits. These allow your provider to monitor your health and adjust your treatment plan, if needed. During these visits:

- Tell your provider about all the medications you take. Mention if you have any side effects that are bothering you.
- Report if you have any new or unusual symptoms. Also, tell your provider if certain things seem to trigger your symptoms or make them worse.
- Work with your provider to manage any other health problems you have. Certain problems, such as high blood pressure or thyroid disease, can make AFib worse, so it's important to manage them.



## Taking Your Pulse

Taking your pulse (heart rate) can help you and your healthcare provider track how well your treatment is working. You can take your pulse at the wrist or the neck. Take your pulse as often as recommended by your provider. And be sure to take it during any suspected AFib episodes. Record your results in a log. Your provider can review the results with you during follow-up visits.



## Work with Your Provider

AFib affects each person differently. Work with your healthcare provider to understand your condition and the treatments that may be right for you. Together, you and your provider can create a plan to manage your AFib. That way, you can feel good and live a healthier life.

## Staying Healthy with AFib

Make long-term changes that can help control AFib and improve overall health.

To feel your best:

- Get regular exercise.
- Make healthy food choices.
- Lose excess body weight.
- Quit smoking.
- Limit alcohol.



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